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ABSTRACT

Attacks on academic tenure are examined in light of current concerns about higher education in general and with respect to a predicted rise in faculty age in a period of reduced expansion. Two charges against tenure, nonresponsiveness and sloth, are selected because of the existence of empirical evidence. Research studies on (1) faculty openness to changing demands and (2) faculty productivity are displayed and analyzed in their relationship to age, rank, and tenure. In both cases mediating factors are identified. In general, the 2 charges against tenure are not supported by the evidence. At the same time, flaws in the operation of colleges and universities are uncovered. In the main, they fall in the domain of human relations--of good personnel practices among professionals. Suggestions for improvement are made and needed research fields are identified. (Author)

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Attacks on academic tenure are examined in light of current concerns about higher education in general and with respect to a predicted rise in faculty age in a period of reduced expansion.

Two charges against tenure, non-responsiveness and sloth, are selected because of the existence of empirical evidence. Research studies on faculty openness to changing demands are displayed and analyzed in their relationship to age, rank, and tenure. Relevant studies on faculty productivity are inspected for their relationship to age, rank, and tenure. In both instances mediating factors are identified.

In general, ^{the} two charges against tenure are not supported by the evidence. At the same time, flaws in the operation of colleges and universities are uncovered. In the main, they fall in the domain of human relations, of good personnel practices among professionals. Revisions are suggested and needed research is indicated.

FACULTY RESPONSIVENESS AND FACULTY PRODUCTIVITY

AS FUNCTIONS OF AGE, RANK, AND TENURE:

SOME INFERENCES FROM THE EMPIRICAL LITERATURE¹

¹Many Center colleagues have contributed to the strengths of this document through interchange and critique. Fred Breisch, Tim Gilmour, Paul Lingenfelter, Jim Litwin, Herb Martin, Bob Peterson, John Remington, Mark Schlesinger, and Jack Waggett addressed a related problem and shared their discoveries with me. Dick Wynn provided extensive editorial assistance, as well as substantive corrections. Discussions with Roger Heyns suggested a conceptual setting for the paper. I am indebted particularly to these people and express my gratitude.

I. INTRODUCTION

Higher education has fallen from grace. Her tumble defies an explanation all agree upon. That she would fall, however, was as certain as night following day. There was no other way to go from the unprecedented pinnacles of the 1960's. Furthermore, like other social phenomena -- the science establishment, for example -- fortunes rise and fall with recurring regularity (Miller, 1971). Even if there had not been demonstrations on campuses associated with Vietnam or attacks on administrators for not having dealt harshly with recalcitrant students, disaffection with higher education after a period of unparalleled boom was inevitable. The particular concern of this

analysis stems from the fact that the principal target of the citizen's wrath is now the academic man. Tenure is the bull's eye.

The critics come from the left as well as from the right, from administrators as well as from legislators, from faculty within the ranks as well as from students. Several take their cue from students and suggest that faculty's preoccupation with research and neglect of teaching is a part of the cause of student alienation (Steiger, 1970: 86). "Liberals" cite faculty resistance to internal change as a drag on needed university reform (Furniss, 1970: 64-65). On the other hand, "conservatives" accuse faculty of poisoning young minds with leftist propaganda (Mitchell, Sept., 1970; Byrd, Sept., 1970). Women see a closed system just as their movement gains in support (Moog, 1971: 983).

In Michigan, minimum work load standards for faculty were established by the legislature (State of Michigan, 1970); in California faculty were excluded from a salary increase granted to all other state employees; and, according to the Chronicle of Higher Education, limitations on academic tenure have been proposed in five states (Scully, March 22, 1971: 1-4).

A recent article in Time quotes a university president:

Almost every campus has them: incompetent professors who cannot be fired, much less shamed into quitting. ... (Tenure has become) a device used by the devil to encourage faculty slothfulness... Many campuses are now afflicted with an over supply of drones who refuse to make way for younger, more dynamic teachers (May 10, 1971: 62,64).

Time's colorful prose might tempt an observer to discount its attacks if similar, albeit less vivid, broadsides were not being

made from within academe. An informal poll at the 1971 convention of American Association of Higher Education (a mixture of people from higher education, though primarily administrators) showed that only 95 of 585 felt the tenure system to be basically sound and 133 felt it should be abandoned (Hodgkinson, 1971: 8).

The American Association of State Colleges and Universities recently withdrew its support of AAUP's 1940 policy statement on Academic Freedom and Tenure² (AASCTC, Nov. 23, 1970: 1)² Also, the

² The Association has recently passed a new and different statement (AASCTC, 1971). It continues to endorse academic tenure.

Scranton Commission (Oct. 5, 1970: 22), and the Newman Commission recommended limitation on tenure appointments in order to increase diversity among college faculty (Newman Commission, March 15, 1971: 1).

Emotions are high. The canvas before us is a complex one. Before judging its artistic quality, however, experience teaches that in heated disputes it is best to pause and authenticate. There exists the possibility that exaggeration has distorted reality. That Possibly even a fraud has been introduced. After all, the claims and their counters are not only extreme; they are contradictory.

Authenticating a piece of art is a physical task -- dating, brush strokes, pigmentation, and the like. So is establishing the magnitude of the issue of tenure and faculty. Data are on hand. Computations can be made. Let the issue be clarified so as to determine how analysis is to proceed.

A. SOME FACTS

The statements that need to be established are (1) whether or not the average age of faculty will now rise after having remained quite constant for a long period of time, and (2) whether or not the number of faculty under tenure will now increase. Then, if these assumed beliefs are true, is the magnitude appreciable, and hence an important matter, or is the effect so small so as to be essentially inconsequential and not worth the immense effort now being extended to alter a long standing practice in higher education. Altering tenure practices may be important to improve higher education. If so, they should be changed. The point here is they should not be whimsically changed if the causes for action are either false and/or inconsequential.

With respect to the question of supply and demand for faculty, there no longer is any dispute that the supply will exceed the demand for an extended period of time, at least for the next two decades (Cartter and Farrell, 1969; Cartter, 1971; Bock, 1971; Wolfe and Kidd, 1971). Some disagreement lingers with regard to the magnitude of the over-production of Ph.D.'s, on how changing social forces might alter conditions, and the like, but not on the fact that graduate schools can (and apparently will continue to) turn out a number of Ph.D.'s increasingly in excess of the number needed for academic positions in colleges and universities.

Two prime consequences of an over-supply are the lack of new entrants into the larger system of higher education and a reduced faculty mobility, which was never very high (Blackburn, 1970).

Furthermore, Brown (1967: 32, 38, 52) has demonstrated that older faculty move less often than younger faculty. Thus the inferences that the number of new people coming into an institution will diminish and that age will increase are sound.

Secondly, data exist on the percentage of faculty who are on tenure. In accordance with AAUP recommended practices, associate and full professors most often possess tenure; assistant professors and instructors do not. Dressel (1963: 251) found as a median in 31 major universities that more than 95% of the two higher ranks had tenure whereas only 21% of the assistant professors and none of the instructors did. (The range did extend from 50-100% at the upper two ranks and from 0-89% at the lower two.) A 1955 study reported by Joughin (1969: 333) found that approximately 53% of the full time faculty members in 68 institutions in California, Illinois and Pennsylvania had tenure. A 1963 nationwide study by HEW (Dunham, 1966: 28-29) found that 89% of professors, 75% of associates, 29% of assistants, and 10% of instructors were on tenure.

Furthermore, tenure is related to age. See Table 1. More

[Insert Table 1 about here.]

importantly it varies considerably from place to place. Berelson (1960: 114) reports differences in the percentage of faculty on tenure. The twelve top ranking universities have a higher percentage of faculty at the upper two ranks; the result is that 85% of the graduate faculty and 68% of the general faculty (graduate plus all others) are on tenure. Universities below the ranking of AGS members have 73 and 43%, respectively. Heiss (1970: 144) corroborates Berelson's data with reports from 56 to 85% tenured faculty in her

AGE AND TENURE

Faculty Age	Percent on Tenure
< 30	6%
30-39	35
40-49	67
50-59	78
60-64	82

study of leading universities, again figures above the national mean.

Taking into account the fact that the institutions not sampled are more likely to have lower percentages on tenure, the above figures are slightly high. Balancing such considerations leads to an estimated national figure of 50% of today's faculty being on tenure. Tenure, then is an issue involving more than just a handful. At the same time, the numbers on tenure are not so excessive as to leave no flexibility within the system with regard to personnel. The important question now is what happens to the average age of faculty and to the percentage who will be tenured (assuming it remains a function of rank) when supply becomes excessive. The projections by Mazur (1971: 6-7) have been calculated from Cartter's figures. Mazur predicts that the number of faculty in the 40-65 age bracket will increase 41,000 by 1976. Also, in the period from 1982 to 1990, the total number of faculty is actually expected to decrease by 43,000. At the same time, the number of professors above 40 will increase by 105,600. In each and every year after 1972, the percentage above 40 will increase, although the percent of increase will not be uniform each year.

These calculations in current practices were based on computations from four year institutions in higher education. Hence they exclude a very large segment of higher education, the nation's community and junior colleges. Their omission is almost a necessity in this analysis, for two reasons. First of all, tenure is not the same kind of a phenomenon in these institutions as it is in the four year and graduate colleges and universities. In community

and junior colleges, most frequently continuous employment comes from the same state laws that apply to elementary and secondary teachers. This is different from tenure, in concept if not in effect. For example, Kinker (1968) found in 426 junior colleges that the largest groups either granted no tenure at all or it came automatically after three years of service. This differs but slightly from what Punke (1954) reported earlier. Farris (1968) found in New York that when a faculty member was hired in one of its community colleges he had de facto tenure, just like other civil service employees.

Secondly, as has been argued (Blackburn, 1971), it does not appear as if the two year institutions will absorb the Ph.D. excess, even though this segment of higher education remains an expansion area. Huther (1972) confirms this analysis. In a selected national survey of junior and community colleges he found only 8.5% of the faculty hired for fall, 1971 were Ph.D.'s, a figure very close to that reported in several studies on the percentage of faculty in those colleges with a doctorate.

From the evidence then, the best inference is that (the collective) faculty will age, that is, the average age of faculty in institutions of higher education will increase markedly from the current approximately 41 years. Furthermore, the proportion in each higher rank will increase to an appreciable degree.*

* ³Academic rank is an important variable, independent of age. For while rank obviously is correlated with age, after full professorship in the 40's, only age increases. The studies cited below

will show that rank is a better predictor of behavior than is age.

Therefore, assuming no alteration in current practices, the percentage of tenured faculty will markedly increase.

The critics, then, have focused on substantial inferences. If the health and vitality of our colleges and universities is adversely affected by an aging and increasingly highly ranked and tenured faculty, then there is a new issue facing higher education. The canvas before us is genuine. It warrants full analysis.

B. THE ISSUE AND PROCEDURES

While tenure remains the red circle, other rings receive a full measure of barbs. Calls for accountability and efficiency are frequently heard. So are cries regarding indolence and unproductivity. Complacency and ineffectiveness also are charged. The list is long.

Surprisingly, however, academic freedom does not seem to be under direct fire. What is odd in this absence is that, of course, the principal reason tenure was introduced was to protect academic freedom, the very essence of our colleges and universities.

Thus the issue under consideration appears to be more than tenure. It seems to be higher education, faculty behavior and administrative management. What is involved is a group of professional men in the occupation of college teaching. It is their careers that are under scrutiny.

What happens to a man in this vocation over a span of 40 years? What are his hopes and aspirations? How shall his performance be

judged? What is his responsibility for the growth and development of the organization over an extended period of time -- to his students, his colleagues, his deans, his college, and to society? What responsibilities do administrators have in nurturing the talents this professional brings to his job? What can they do to the work environment to best achieve the multiple goals individuals and universities have?

Th and related questions are what really are at issue in the attacks on tenure, on higher education.

It is embarrassing that heretofore higher education has not even systematically examined them. So, this is a welcome opportunity, a chance to begin an exploration, display evidence, draw warranted inferences, indicate research most seriously needed, and make recommendations for future practice. The critics are to be thanked for prompting an analysis that should have been conducted as a normal procedure.

Unfortunately, many of the accusations are of a kind that escape objective evidence. Academic freedom and proselytizing for radicalism, for example, are issues on which opinions are held but on which documentation lacks for settling debates. However, two fundamental charges are accessible to analysis, even if at times obliquely.

As the opening paragraphs suggested, one of the crucial factors underlying the rhetoric calling for the removal of tenure is the lack of faculty's openness to change. No one questions that academic man must be dynamic. He must be sensitive to diversity. He must

be receptive to innovations. He must be immunized from ossification.

The unquestioned assumption underlying the critic's argument is that tenure is linked in a casual way to a decrease in the responsiveness of faculty to important demands made on them.

The other analyzable factor is the charge of slothfulness. No one questions that academic man must be productive. He must maintain his performance at a high level. He must be inoculated against indolence. Here the unquestioned assumption underlying the critic's argument is that tenure is linked in a casual way to a decrease in their productivity.⁴

⁴Supposedly tenure is not the direct cause. Rather it is one step removed. Tenure is blamed in that it creates a condition whereby faculty can ignore requests, a state of affairs in which they act in a closed manner, that they readily become complacent. In this way tenure is the culprit, the cause.

Finally, our task is not that of pathologist performing an autopsy. Higher education is very much alive. As said above, it is a complex work of art. It is the artist's tools of analysis that we borrow - line, color, form, and the like. We know that we must also be willing to get beyond the first and gut reaction to a painting, an "I like it" or "I don't" one. We want to educate ourselves. We want to see the whole in its proper perspective, after the critical canons have been fairly applied. We have to be open to change our minds, if necessary to come to like what first may have offended or

to have reservations about what initially was attractive, and perhaps some of both.

With these understandings, the analysis now turns to the relevant studies to see what can be inferred about two dimensions of the issue: (1) the openness of faculty to change, their responsiveness to legitimate demands, and (2) their productivity, both when their age, rank, and the percentage of them on tenure increases.

II. STUDIES RELATED TO RESPONSIVENESS

The research is divided into three major categories. The first deals with inquiries conducted to discover faculty values and practices with respect to receptiveness to new ideas and to reform of current practices both within and without the curriculum. The second group of studies deal with the notion of faculty "keeping relevant." This catch-all phrase is given a more precise meaning by selecting student attitudes towards the performance of faculty members in the classroom. The final major category of studies falls under the general dichotomy of "liberalism-conservatism." It looks at faculty practice on this dimension as liberalism-conservatism is related to the college or university at which the academic man works, the subject he teaches, his personality, and the stage in his career.

In the way that the painting is examined for balance, repetition and variation of theme, and proportion, so here these three dimensions give meaning to faculty responsiveness. The desire is to ascertain the total effect by synthesizing the parts, to see if the canvas portrays an active rather than static academic man, one who is bold, not

delicate, free and creative, not mechanical and unalterable.

A. ACADEMIC ISSUES

1. Curricular

Evans' (1968) inquiry dealt with a faculty's willingness to adopt educational television as a mode of instruction in their municipal university. His procedures raise methodological questions. For example, while Evans claims no judgment is to be made about the goodness or badness of those who agree to teach by using television, he nonetheless calls those who will "innovators" and those who do not "laggards." His findings, too, are uneven and mixed. For example, he discovers faculty in the more marginal disciplines, and in science and in technical studies, are more willing to teach by television than are those in the classical liberal arts departments. The innovators were supposed to be more "cosmopolitan" whereas the laggards were more "local" (1968:52). While he identifies characteristics of these two groups, he does not really relate this to age, although there is some indication that it is the younger faculty who are more receptive to his "innovation." At the same time it is the TV endorsers who are resistant "to the admission of qualified Negroes" (1968: 26) into their university whereas the so-called conservative, anti-innovator, group favors such an action.

Furthermore, when Evans attempted to extend his findings to nine other universities by interviewing administrators and faculty at these institutions, the impression reported by the research team

was that it was the less established professors who were more likely to resist innovations. Innovations were introduced by the older, more secure faculty members (Evans: 146). Presumably the former were untenured, the latter tenured.

Evans' qualified findings are not greatly different from Caffrey's (1969) who found almost complete agreement between board members, administrators, and faculty (more than 95% of each group) as to the undesirability of television instruction. At the time, all three constituencies judged revision of undergraduate curriculum highly desirable (95%) and highly likely to occur (over 90%). These same groups gave nearly as high ratings to the desirability of colleges and universities allocating resources to solve interracial and other social problems, giving academic credit to student experience in a non-academic community, and permitting more electives and individualizing programs. Researchers classify such programs as innovations. While this study talks about faculty in general, and is not related to age, the source of faculty supply was the AAUP roster and hence weighted toward the senior end (Lazarsfeld and Thielens, 1958: 245). The data remains opinion, not action. The relationship is unknown.

Hefferlin (1969) studied a stratified sample of colleges and universities across the country regarding their openness to change. He talked on the telephone with one faculty member at each institution. He concludes the more dynamic institutions were the ones that had the smallest number of tenured faculty in a particular department, about one-third. In those institutions that he called static, about half had tenure (Hefferlin, (1969: 127).⁵ Hefferlin differen-

⁵Thus Hefferlin apparently slighted mature universities (c.f. Berelson and Heiss data above). It can also be noted that Heiss' graduate faculty rejected the statement that tenure inhibits innovation by more than two to one (1970: 145-146). This, of course, is respected opinion, but not demonstrated fact. Another portion of her study found large numbers of faculty believing in radical reform, especially in the curricular area of graduate programs. (1970: 77).

tiates dynamic from static institutions by noting changes in course offerings as reported in catalogues. Thus, if an institution happened to be in a rapid state of expansion, with new faculty positions being added, naturally there would be more courses added as more specialties are introduced and accommodations are made to the desires of newly added staff. That the new faculty are younger, and hence not tenured, may have absolutely nothing to do with innovation itself. Hefferlin did not have direct control for age. He obtains his results by defining the situation in such a way that tenure is in no way the causal agent for what he takes to be change. Yet his inference is causal.

This criticism of Hefferlin is supported by Cross (1969: 2) reporting on some of the studies done principally by Wilson and Gaff. With responses from over a thousand faculty members from their sample of six institutions, she reports that "only 9% ... thought that students should have an equal vote with faculty in formulating

academic policies, and younger faculty were no more receptive to the idea than older faculty." Finally, Klapper (1969: 38) in a study of work roles of faculty members in four leading independent coeducational liberal arts colleges found that "the comparative newcomer to college teaching did not, as a group, constitute a new breed."

In conclusion, two contemporary national surveys reveal numerous changes in curriculum and instruction took place in the past ten years. Brick and McGrath examined practices prior and subsequent to 1961 in liberal arts colleges. They report that the percentage of institutions that had freshman seminars increased from 23 to 57%, those with work-study programs changed from 19 to 77%, and the number with honor programs decreased from 47 to 42% (1969: 20). In the instructional domain, the authors found increases from 23 to 69% in team teaching, from 17 to 66% in use of teaching machines, from 9 to 75% in use of programmed instruction. Over the same time interval the administration of comprehensive examinations declined from 65 to 28% (1969: 49). Dressel and DeLisle (1969) uncovered similar changes in their national survey of all kinds of four year institutions over the decade of the 60's.

Despite judgement as to the qualitative merits and the actual extent of the alterations, the evidence supports the assertion that change has occurred. Unfortunately, neither Brick and McGrath nor Dressel and DeLisle have data to locate either the originators or the resisters to the changes made. The alterations are typically in the faculty domain and ordinarily require wide faculty support,

especially from senior influentials. But where did the pressures come from? Who initiated a reform? These are not known. Change has taken place. The institutions have been responsive.

2. Extra-curricular

When it comes to events within acad : that border on matters essentially outside of the classroom, appreciable differences are noted between faculty attitudes of those who are older (and hence more likely tenured) than those who are younger. For example, Gold (1969) found older professors much more disapproving of the campus incidents that disrupted classes than their younger counterparts. Much more frequently the older faculty found the language of the disrupters to have implied threats, were much more likely to have been fearful of being physically harmed, and were much more inclined to believe that the police should have been called (1969: 2,3,6). Cross (1969: 3), again referring to as yet unpublished data from Wilson and Gaff, states that faculty under 30 and more permissive than are professors 55 or over in such matters as faculty members participating in non-violent demonstrations, unmarried male and female students sharing the same apartment, the holding of anti-draft protest meetings by students, and inviting social activists to speak on the campus with student government funds.

B. KEEPING RELEVANT

The phrase carries a strong meaning today, even if the expression escapes a precise definition. One dimension of relevance can

be found in the classroom and quite aside from curriculum change.

Teaching effectiveness is a highly sensitive faculty role for students and faculty alike. Probably in no other facet of higher education is the attack on academic men as severe as it is in regard to faculty performance in the classroom. The stereotypes of yellowed notes, lack of relatedness to the real world, and the like reverberate. Faculty failure here is indefensible.

Hence the argument for utilizing teaching effectiveness as a measure of relevance is proper. Succinctly, it runs as follows: Being "with it" is a function of age. Hence, the younger instructors and those at lower ranks will be rated higher by students than will be those who are older, at the higher (tenured) ranks.

Fortunately there have been a number of investigations which report student ratings of faculty. Furthermore, these have been done over an extended period of time, beginning in the 1920's. The overall outcomes are not unequivocal. Thus, it is important to discuss several of these so that the reader may judge if perspective is accurately executed.

Two studies by Remmers, the first with Elliott (1949; 1963), one by McGrath (1962), and one by Stallings and Singdahl (1969) all show a positive relationship between teaching effectiveness and academic rank. That is, faculty in the higher ranks are judged to be better teachers than are faculty in the lower ranks. Costin, Greenough, and Menges, after their extensive review of the research on this topic, report "experienced or higher ranking instructors usually receive higher ratings than did their less experienced colleagues (1971: 530)."

Hildebrand and Wilson (1970) found essentially no correlation ($r = .06$ and not significant) between teaching effectiveness and rank. On the other side, a study by Guthrie (1949) and one by Rayder (1968) show very small negative correlations of teaching effectiveness and rank. In fact, the negative correlations are not statistically significant whereas the positive ones were.

Riley, Ryan, and Lifshitz provide data on age and teaching effectiveness at Rutgers on ten dimensions. Younger instructors (below 40) score above the median on all but one factor and the most senior group (50-69 years old) is below the median on all but one factor (1950: 99). The general pattern is a decrease with age in matters of speaking ability, organization, tolerance to disagreement, and six other factors.

However, one factor showing an exception is knowledge of the subject. Before dismissing this one aberration as unimportant, recognizing that Riley et al also find~~g~~ that students gave this trait the highest rating for their actual and ideal teacher (1950: 93). The proportion of full professors above the median in knowledge of the subject is 85% as contrasted to 51% of the instructors (1950: 101).

Again, the findings fail to yield unequivocal outcomes. Shadows and grays mix with bright hues. The best of all possible worlds resists crystalizing in a person of one age. Faculty lose the attractiveness to students as they move through their career, including the acquiring and passing beyond tenure. But in student eyes, tenure has not produced deterioration of knowledge for that continually increases. Full professors are generally judged by students more

knowledgeable than associates, the latter more than assistants, and so on down the ranks.

Thus the outcomes do not point overwhelmingly in one direction. Nonetheless they are contrary to expectations. The expounded shibboleths predict a statistically significant negative correlation. This does not exist. Thus the tentative conclusion is that if teaching effectiveness is a measure of keeping relevant, then evidence supporting the claim that older professors are inferior is lacking. In fact, the portrait gains in value with time.

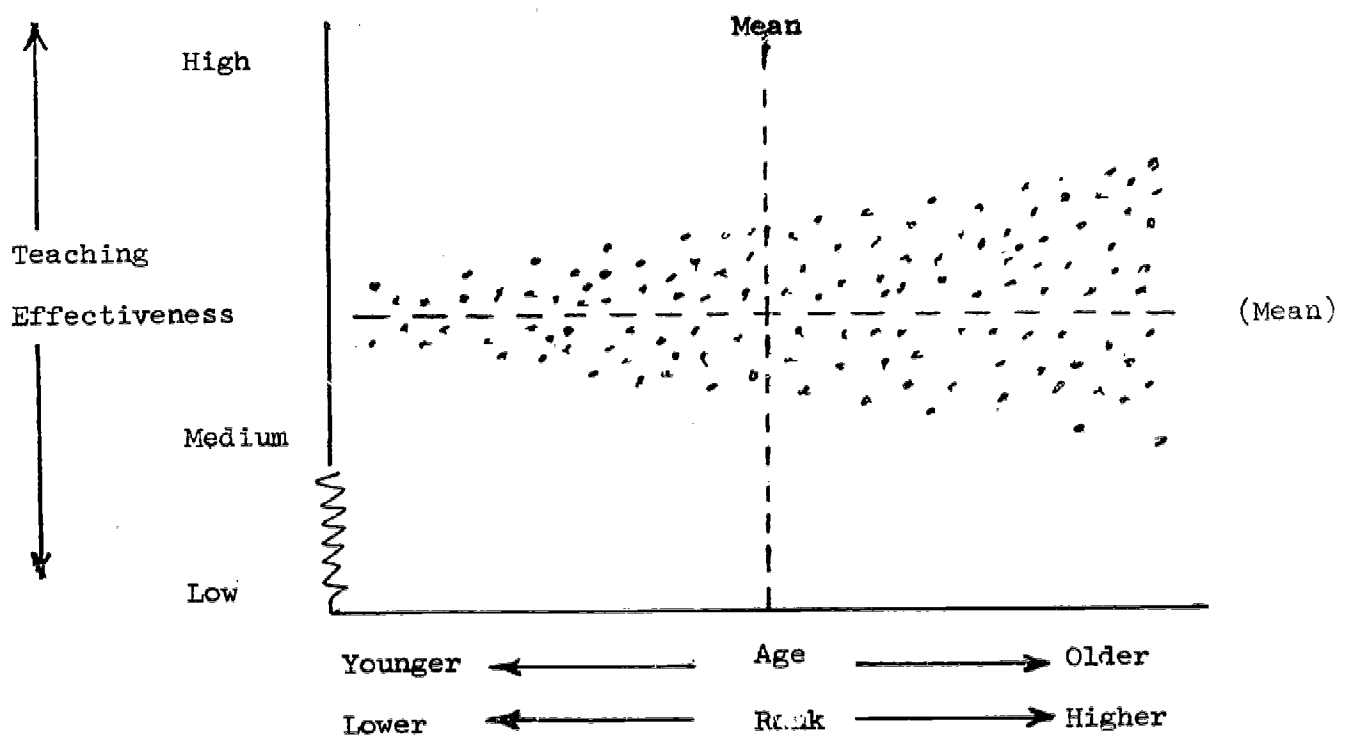
In two ongoing pieces of research, Blackburn has plotted both age and rank against teaching effectiveness of all faculty in two liberal arts colleges. See figure 1 (*Schematized*). The correlation is almost exactly zero, non-significant. What does appear from the data, however, is that the variation of performance is much greater among the higher ranked and older faculty than it is among the younger.

[Insert Figure 1 about here.]

That is, students observe differences between faculty performances at all ages and ranks, but they observe much greater differences at one end of the scale. Thus the very outstanding and the least satisfactory occur among the older and higher ranked faculty. The hypothesis suggested by this data is that indeed there are a few older faculty who are found wanting by students, "wanting" being on the border of acceptability in the classroom.

It is important to point out that even the lowest performer is not inadequate. Redefer (nd.) obtained similar evidence at New York

Figure 1: Teaching Effectiveness versus Age and Rank



University. Of forty-eight faculty rated by students, 65% were scored in the highest category of "finest college teacher." The lowest group (three faculty) were rated closest to "sometimes good, sometimes not." No faculty fell in either of the two lowest of the five categories, "consistently below average" and "poor teacher."

LIBERALISM-CONSERVATISM

Faculty behavior differs within and without college and university settings. The following analysis is restricted to his role behavior within the institution. Attention must be paid to a number of variables which affect faculty behavior and make generalizations about all faculty highly suspect, or utterly trivial. The nature of the institution at which the professor works is important. So is the discipline in which he happens to specialize. Personal factors also alter a professor's openness. Finally, and perhaps surprisingly, the stage in his career relates in a non-linear way with his performance and attitudes in a variety of situations. Each of these intervening variables is treated in order.

1. Place

Lazarsfeld and Thielens (1958) found academic freedom practice to vary appreciably with the reputation of the institution under consideration. Deference, personal mannerisms, and acceptance of outsiders were noticed by the interviewers to vary along the same scale of institution differentiation (Reisman, 1958). Liberalism (for example, having voted Democratic rather than Republican) is correlated with place.

Faculty at larger universities (more than 9000 students) were much more likely to have voted Democratic than faculty at very small colleges (less than 700) -- 75% vs. 44% (Lazarsfeld and Thielens, 1958: 23). These same faculty are also more than twice as likely to be in the group of highly productive persons -- 66% vs. 29%. The general overall finding is that faculty at the most prestigious colleges and universities are likely to be much more "liberal" than are those who work at institutions farther down Riesman's snake..

2. Discipline

Lipset and Ladd studied attitudes of 58,000 faculty from 300 four-year institutions and found sharp divisions between academic fields along a leftist-rightist continuum: Social science and humanities faculty occupied the liberal wing of the spectrum with business, engineering, education, medicine, and agriculture at or near the other extreme (1971: 54). Scully (1970a: 3) reports from the same data bank on faculty attitudes from different disciplines with respect to war and peace, student activism, and the like. Leatherman (1963) found the different academic disciplines in a major university varying on a scale of realistic versus idealistic philosophical alternatives. In a emerging university, Lewis (1966b: 453-455) uncovered appreciable differences with respect to adherence to and belief in the practice of academic freedom and its defense between faculty in engineering and the medical sciences as contrasted with those in the Arts and Science departments. Peters (1971) identified distinct faculty values between humanities, natural science, and social sciences.

The overall finding is that faculty will tend to be more liberal

(at least on matters outside academe, and on many within) the more they are related to the social-scientific and humanistic disciplines within the traditional arts and science college and that they will be more conservative in the natural sciences and the professional schools that go to make up a complex university. It should be kept in mind that within each of these subgroups there is great variation. Some professors within the most "conservative" units are as liberal or even more liberal than a large number of colleagues in a so-called "liberal discipline."

3. Personal Factors

Research on faculty with respect to personality variables simply has not been carried out to an extensive degree. Two studies are reported here.

Apprehension -- a fear to take a stand on controversial issues -- decreases with increasing age. It does so without regard to the man's tenure, professional status, or his possession of an outside income. At the same time his permissiveness decreases with increasing age (Lazarsfeld and Thielens, 1958: 241, 245). The reason for this kind of conservatism is not clear. It is, however, consistent with other data, for example, on voting behavior; it switches toward the Republican party with aging.⁶

⁶ The data cited are not longitudinal. They are a snap-shot of a faculty of different ages. The assumption is made that today's 40 year old will be like today's 60 year old 20 years from now. While the assumption is open to some question -- e.g., were origins similar,

times comparable, etc. -- much weight can be given to support the assumption.

In 17 colleges and universities in the Eastern United States, with a population of over 2,000 professors, Armor et al (1967) found faculty in general about twice as opposed to the Viet Nam war as was the general population. Although the vast majority of faculty were anything but radical in their expressed beliefs, there were appreciable and significant differences within the professoriate. The differences, however, were not on the basis of rank but rather by religious preference. Catholics were much more sympathetic to the war effort than were Protestants. Jews were the most anti-war group.

The suspicion is that other personal factors would also have a correlation with faculty "liberalism-conservatism" and that these, too, would be quite independent of either age or rank. As yet, however, such inquiries have not been conducted.

4. Career Stage

Evidence is now accumulating that faculty liberalism-conservatism is not a linear function of aging. While in general the results show that younger people are more liberal than are the senior members of colleges and universities, three studies indicate that this is not a straight line movement from the one end of the continuum to the other. For example, Schuman and Lauman (1967) discovered in their investigation of faculty attitudes towards the Viet Nam war that the associate professors were much more "conservative" (in this case, "hawkish" rather than "dovish") than were either the assistant pro-

fessors on the one side or the full professors on the other.

(Disciplines were controlled.)

In Blackburn's and Lindquist's (1971) study it was the associate professor, not the full professor, who was most reluctant to accord students voting rights on committees which acted on matters heretofore falling exclusively with the faculty domain. In both these studies the pattern is that the assistant professor is the most liberal, the full professor next, and the associate the most conservative.

In a study now in progress of a liberal arts college faculty where faculty self-rated their political attitude on a radical to ultra-conservative scale, Blackburn (1972) found in the mean scores by rank that the instructor is the most liberal, the associate professor the most conservative, and the assistant and full professor tied with an intermediate value.

What seems to be happening is that a man goes through a career cycle in which his liberalism (and by definition here, a dimension of his openness) wanes and then waxes again, although never quite returning to its initial state. If this is "conservatism," then rank and hence career stage, a variable open to instructional modification, is what requires attention,

How these issues and outcomes relate to tenure is postponed until the studies on faculty productivity have been presented. These are reported next.

III. STUDIES RELATED TO PRODUCTIVITY

Productivity, like openness, is a many faceted concept. As with receptiveness to change, the definition of productivity will be oper-

ationally defined by those measures which can be brought to bear on the general notion. Thus productivity, too, will be incompletely defined. Inferences drawn from the partial nature of what is developed restrict unqualified generalizations.

Nonetheless, the urgency of the matter demands proper utilization of existing knowledge. Passion and persuasion must not overrule hard empirical data. The many dimensions of the faculty role make clear that there is no single measure of productivity that can represent the total contribution of academic men.

To begin, teaching is the professor's principal activity. This productivity can be measured quite directly. For example, credit hours, degrees awarded, hours in the classroom, or other similar measures can be obtained. They are not, however, easily equated. Laboratory instruction vs. lecturing, large class vs. seminar, and dissertation supervision vs. freshman mathematics class are but a few inequalities sufficient to trigger protracted faculty debate. Despite the complications in the process, it is apparent that this kind of faculty output can be proportioned for professors at all ages and all ranks. That is, tenured full professors and untenured new assistant professors are likely to have large lower division lecture classes. Thus a faculty's major productivity is independent of the critical concern, an important fact to keep in mind.

But faculty productivity is more than teaching, even when broadly defined. In fact, faculty productivity usually is associated with scholarship and research -- articles, monographs, and books being the ultimate product.⁷

⁷ "Scholarship" -- as contrasted with "research" -- is sometimes taken as the more general term of faculty creativity that culminates in publication. Sometimes the distinction is based on the nature of the product, the discipline in which the inquiry is conducted. In these cases, those who work principally with words -- literature and history, for example -- are said to be engaged in scholarship while those who utilize "hard" data -- physics and economics, for example -- are said to be conducting research. The terms hold equal value here and will be used interchangeably. However, the word "research" will appear more frequently since the majority of the studies on faculty productivity are in the sciences.

It must be kept in mind, however, that it is only about 10% of the faculty who produce 90% of this kind of output (Wilson, 1967; Berelson, 1960). The ninety percent are also "intellectually creative," to varying extents and with differing degrees of success, of course. The writing of syllabi for courses, reorganizing existing offerings, inventing new courses, reading and synthesizing other's ideas,... a long list of products are more directly connected to teaching than is scholarship in the creative and productive arts. No studies have quantified this faculty work contribution. While academic men informally judge and respect it, they accord it less value than that submitted to the total public of experts for criticism. For the purpose of this inquiry it is assumed that a high correlation exists between this kind of intellectual output and scholarship as generally conceived. Said another way, the ninety-percent are assumed to have attributes which

correlate with the ten-percent, so that the findings on the latter can be generalized.

Service, the third of the tripartite roles of academic men, unfortunately has not been researched. This does not detract from the role's importance as a component of productivity. Service -- administrative contribution to the viability of the institution, counseling, advising, expertise provided the community, state, and nation, and the like -- are fundamental for the health of the university and for society. Also, since promotion is not correlated with research (Luthans, 1967; Lasher, 1968), and since teaching effectiveness is related to research, then service is involved in the career fate of academic men. Committee assignments do matter. They are important for the organization. They are a part of productivity. The only regret here is that we have no direct measure of service and hence of the weight it receives in practice.⁸

⁸One study does give some insight into service when it utilizes "over-all contribution" to the college as a measure of faculty productivity. This research is discussed below. Another study introduces faculty Ph.D. output as a measure of productivity (Trowbridge, 1971). This measure is neither "service" in the sense just described nor "teaching" by standard definitions. This research is not further discussed in this paper.

The studies have been placed in three major categories: those which deal with productivity as dependent upon time (age, rank, and tenure); those which give some insight about productivity as it is affected by

environment; and those which relate personal variables to faculty output.⁹

⁹ "Productivity" does not maintain a uniform meaning from study to study. This is unfortunate when comparisons between inquiries are desired. However, the variation in definition is not serious for the purposes of this analysis. The measures are intercorrelated. For example, Meltzer (1956) finds $r=.51$ for number of publications and number of times the author is cited by others. Other measures correlate higher. Furthermore, the concern here is with performance and rank, age, and tenure, not the best measure of productivity. Also, the debate on appropriate yard sticks contributes to and sparks research on the topic, a desired outcome. Articles, books, papers -- with different weights for each and with control for publisher -- as well as awards, prizes, society memberships, and citation counts all have been used as productivity measures. See Smith and Fiedler (1971) for a good review.

As a canvas is analyzed for line, plane, and volume, the three categories convey an understanding of faculty productivity. Their existence helps depict the overall impression. They give the viewer a means to detect if the painting presents a deep rather than shallow academic man, one who is growing and developing, not fixed, solid, not empty.

A. PRODUCTIVITY AS A FUNCTION OF TIME

Age

The studies on a professional's productivity as a function of his age are not mutually corroborating. One set concentrates on age of prime contribution. Three others look at output. One of these uncovers an almost precipitous drop after a peak age. The other discovers a saddle effect, a drop followed by a second rise at an advanced age. Another reports steady and sometimes even increasing output with increasing age.

Davis (1954) studied scholarly productivity at the University of Colorado between 1920 and 1939 and found that it peaked at age 45 and then dropped. Lehman (1953) conducted a definitive study and was corroborated five years later. He determined that the outstanding scientific achievements most often occurred between the ages of 30 and 40. After that, such accomplishments dropped off considerably. However, it is outstanding achievement, not total productivity, that is measured by Lehman. Adams (1946) dispelled the myth of a prime scientific contributions occurring before age 30. Only 9% did; the median age was 43 years. In another study of publication productivity by Ph.D's in sociology, Axelson (1959) found that output rose for first fifteen years following the receipt of the doctorate and then fell off considerably after that.

Pelz and Andrews (1966: 174-213) found the second pattern -- rise, fall, and rise. They provide an excellent and extensive analysis of scientific productivity as it relates to age. While

only one of their subgroups consists of a population of university-based research oriented scientists, their control of important variables and the comparisons they make provide valuable insights.

To begin with, Pelz and Andrews accept Lehman's (1953; 1958; 1960) excellent work and conclusions -- that creative scientific output peaks in the early years (late twenties to early forties) and then declines. (They do observe in a footnote (1966: 182) that Lehman found "a second, lower hump for a man in his 50's," a principal finding of Pelz and Andrews.) What Pelz and Andrews do is to move on to the next question, namely, "why?" They generate five hypotheses for testing: a decline in intellectual potential, a drawing off into administrative work of the more able, a relaxation of achievement potential after success (really the tenure claim of slothfulness), overspecialization, and technical obsolescence. They also look at performance of kinds other than the fully innovative - creative type, especially at convergent - synthesizing efforts. Journal articles are examples of the first type, books the second.

Pelz and Andrews findings are not without room for debate. Decline in performance does occur in many settings and for many people. However, their most important general discovery is a saddle shape curve of performance with age -- a rise, a fall, but then a second rise when a man enters the 50's. Then a second fall occurs. They did find the nature of the contribution changes with age, becoming more integrative in later years (1966: 196). Their data does not support a loss of intellectual powers. Nor is there causal

connection between success followed by lethargy. They do find a decline in productivity can occur when motivation falls. However, they learned that for some individuals a high level of productivity can be maintained. The erosion with age is not inevitable. When projects were changed periodically, when self-reliance was high, and when the man's interest were both deep and broad, performance was sustained throughout his career.

Pelz's and Andrew's findings are confirmed in a study by Cantrell (1967) in a engineering department in a major university. When productivity was measured by research articles, there was a general falling off after age 50. (The peaking is much later than the studies mentioned above). However, the output of books and other kinds of contributions, including the management of projects, increases so that if these were included in the measure of total productivity, there was no drop off at all but rather a continuous rise. This is the third pattern. Cantrell's findings, then, are not unlike those of Roe (1953) in her studies of outstanding scientists. She found productivity increasing continuously with age. Lasarsfeld's and Thielens' (1958: 10) data also show total production increasing with age. The social scientist's output doubles between age forty-one and fifty from what it was prior to that age. Furthermore, it still increases after age fifty, although not in the same proportion. The findings held for both low and high producers.

2. Career Stage

The issue of professorial slothfulness enters the argument

somewhat differently with respect to rank and tenure than it does with age (without regard to career stage). Stated in its extreme, it runs as follows: Faculty will produce so as to be promoted to associate professor, and hence tenure. Then their output will slacken off, probably to rise once more briefly a half dozen or so years later so as to acquire a promotion to a full professor. Then their activity ceases for the remaining 20 years of their career.

Three studies have examined the relationship of research output with respect to the variable of promotion, and hence rank. (Age was not held constant and is assumed to be highly correlated with rank, up to the final promotion.) Cantrell, mentioned above (1967), found completely negative results. Faculty productivity was not altered in any way just before or just after promotion through the ranks. Furthermore, as cited above, the total output did not change but kept on increasing. In the same institution, Lasher (1968) examined faculty in three liberal arts departments, one each in the humanities, natural sciences, and social sciences. He found no relation between faculty productivity before and after promotion. Productivity was by no means even for all faculty. However, there was neither a pattern of increase prior to promotion nor of a decrease afterwards. Those who were producing kept on producing; those who were turning out little continued much in their same way. These findings receive indirect corroboration from a study by Hoyt (1970) at Kansas State University. No relationship between productivity and merit consideration occurred until the latter half

of a professor's career.

A related set of research needs to be considered at this juncture for its findings bear directly on the issue. Judgement on the worth of a professor ultimately rests with his colleagues. True, students possess considerable influence on the career of a man, much more than they believe they have, especially as evaluators of his teaching. True, it is the administration that has the legal power to promote, to award or withhold tenure. But the counsel of a man's peers cannot be set aside, except on rare occasions.

Thus how they judge his worth becomes critical. Faculty believe creativity in a general sense -- productivity more particularly -- to be an essential characteristic. Furthermore, they value good teaching equally highly. Moreover, and this is the crucial point, they see the two as inextricably intermeshed. As Heiss (1970, p. 229) states: "faculty see an almost perfect correlation between teaching 'effectiveness' and 'eminence in one's field' (the latter, of course, having been acquired by publication)." Her interpretation of faculty responses is fully corroborated by Isaccson, et al (1963), Maslow and Zimmerman (1956), and Blackburn and Clark, three empirical studies each of which has correlations of around 0.7 between faculty ratings of their colleagues on the two measures.

The actual relationship between research output and teaching effectiveness has been investigated in a number of studies, and not with uniform outcomes. Voeks (1962) and Guthrie (1949), both at the University of Washington but at different times with different data, found no relationship between teaching effectiveness and faculty

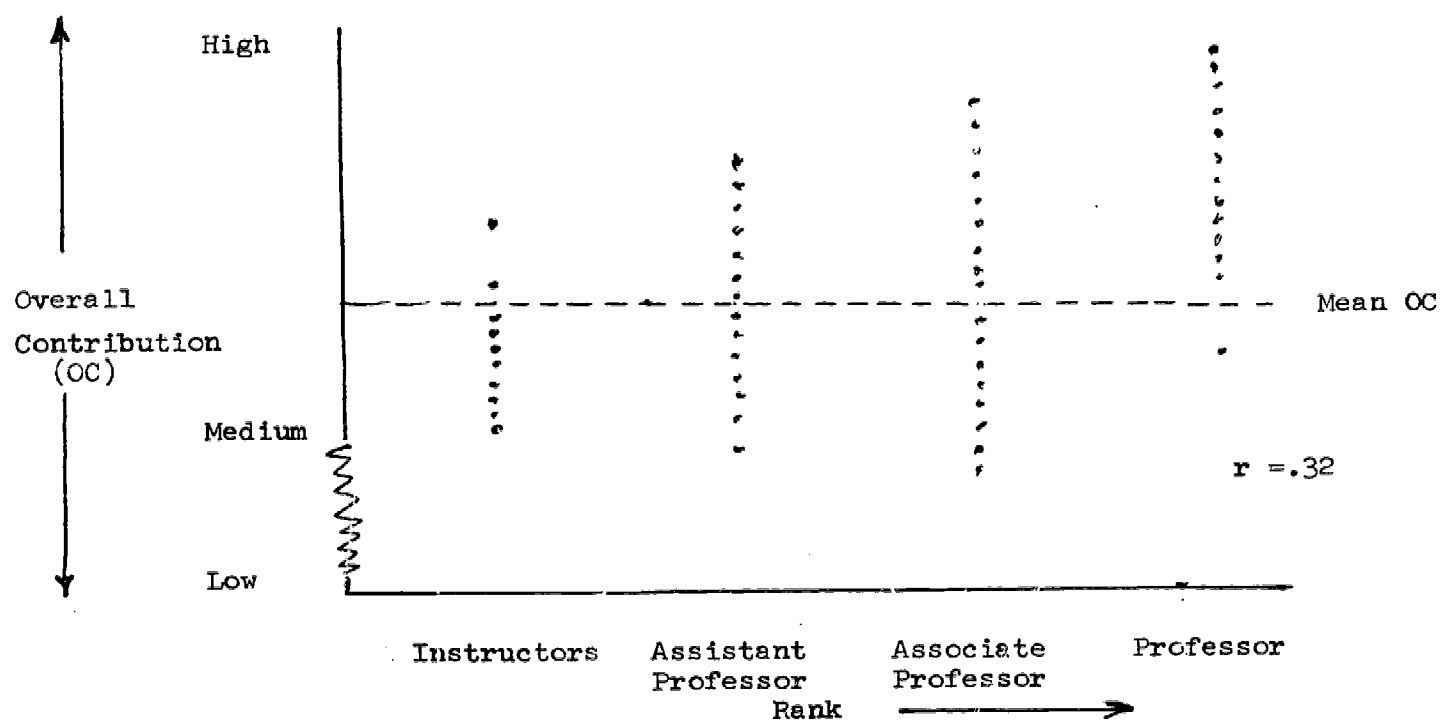
output. Nor did Hayes (1971) at Carnegie- Mellon University. A preliminary investigation by Hammond, Meyer, and Miller (1969) at the University of Wisconsin and at Stanford University similarly found no relationship, nor did either Stallings and Singhal (1970) at Indiana University and McDaniel and Feldhusen (1970) at Purdue University. However, Bresler (1968) at Tufts University, Stallings and Singhal (1969) at the University of Illinois, and Hildebrand and Wilson (1970) at the University of California-Davis did. Correlation coefficients on the order of magnitude of .25 were found.

But the faculty decisions are not based on the weight of the small evidence. They are made on the basis of beliefs they hold. The haze is partially lifted by examining figure 2 from data of Clark and Blackburn. Faculty at a liberal arts college rated their colleagues on their overall contribution to their college along a five point scale from outstanding to inadequate. The average score for each faculty member is plotted against his academic rank.

[Insert Figure 2 about here.]

First of all, the correlation is positive ($r=.32$). Secondly, some associate professors produce the negative variation. Furthermore, the average age of the associate professors above the mean in overall contribution (really a productivity measure for a teaching liberal arts college where actual published research is small) is less than 39 whereas for the associate professors below the mean the average age is over 50. Thus a few individuals and/or an institutional practice confound a pattern.

Figure 2. Peer Rating of Faculty Colleagues on Overall Contribution to the College and the Professor's Rank (Schema)



The overall conclusion of the relationship of productivity with respect to time seems to be that it is not a linear function of age. Nor is it negatively related to career stage. The producers and contributors maintain an output quite independent of rank or age. Hence tenure seems not to be a causal factor.

B. PRODUCTIVITY AS A FUNCTION OF ENVIRONMENT

1. Situs

Several studies have shown that faculty productivity is a function of the place at which they are located. Pelz and Andrews (1966) established this fact with respect to academic versus non-academic locations. Berelson (1960: 127) showed the output of faculty of the twelve leading universities is more than twice that at the next ten. Beyond the third group, output drops off appreciably. Crane (1965) has shown in the case of sociologists that place of work is more highly correlated with output than is either former training or reputation. Thus, while not identifying those factors in a particular environment that either stimulate or inhibit output, where an academic man is working makes a difference in his total research output. Turning to other dimensions within the environment sheds additional light on the complexities.

2. Size of the Work Group

There is a strong belief, but no documentation, that a critical mass of people is necessary for colleague stimulation if output is to increase. The arguments advanced claim there is an optimum size,

"somewhere between too large and too small." If the organization does not have enough men in it, then they cannot stimulate, criticize, and enrich one another. On the other hand, if the group becomes too large, it fractures into specialties. People remove themselves from one another. They no longer know what the other man is doing.

The one study that does shed some light on the idea that a place must be somewhat larger than too small to be productive comes from Wispé (1969) who looked at the productivity of psychology departments as they relate to size. Bigger and better (in terms of productivity) are correlated. Wispé's analysis did not extend to alienation if size became very large.

3. Freedom

Meltzer (1956) found that freedom to direct one's own inquiry without demands from above was essential to high productivity. His study of physiologists contrasted settings in colleges and universities, in government laboratories, and in industry. His findings held without regard to the amount of financial assistance. However, freedom was not sufficient by itself. There had to be some minimal level of support. Thus there is an environment^{al} optimum of freedom and support if productivity is to be maximized.

4. Leaves of Absence

Boswell (1970) studied the productivity of faculty as it related to leaves of absence from a major university. Leaves were of various

kinds -- assignments off campus, work with the government, sabbaticals, and other arrangements that lead to a change of the immediate environment. His findings, while statistically significant in a positive relationship with the independent variable, were not of such a magnitude to indicate that leaves are by themselves sufficient to appreciably increase productivity.

5. Communication

Pelz and Andrews (1966: 38) found that awareness of goals through communication with colleagues and administrators was related to productivity. They found that high contact among colleagues was related to high performance. (This finding supports the notion of an optimum size.) Among groups of researchers, productivity varied curvilinearly with the age of the group. Younger groups and older groups produce less than middle aged groups, a reverse saddle effect with a single hump. Pelz suggests that this relationship can be explained by the effects of groups security and intra-group competition. If older groups remain competitive, the drop in productivity was not as severe.

Faculty apparently sense that communication with, and the stimulation of, their colleagues is important. Gustad (1961) reports that the intellectual stimulation of colleagues was a crucial reward for faculty. Eckert and Stecklin (1961) report similar findings. Theophilus' (1967: 15, 19, 21) study of Michigan faculty reveals a high score indicating the importance of communication with administrators and the importance of collegial competency and relationships.

6. Leadership

Theophilus (1967) also reveals that faculty considered clarity of goals as articulated by academic leaders as an important aspect of their work. In five western colleges, Hill (1966: 169-170, 174) found "a significant relationship between the power of the chairman the [sic] the professional output of the faculty in the department." What is surprising is that the relationship is a negative one. The more power imputed to the chairman, the less productive are the faculty. This suggests that professors who are most productive impute less power to their chairmen and give credence to the notion that the more independent a man becomes of his institution, the higher is his actual output. However, the correlation was not strongly negative, even though statistically significant. Hill also found that the power of the chairman is in fact significantly related to the faculty's perceptions of their own productivity, even if not to their actual output. What is important at the juncture is the demonstration that leadership does matter. The way in which it matters remains unclear.

In summary, then, it can be shown that a number of variables related to the work environment of the academic man do affect productivity. When one examines these and sees that they are matters of leadership, size, communication between workers, support, and freedom to pursue one's own ideas, each appears to be independent of age and rank, and hence of tenure. That is, there

is no a priori reason for believing productivity could not be improved as age and rank increase. The importance of the work environment is something that can be tended to and altered. The claim that tenure decreases productivity remains unsupported. In fact, the independence of the variables supports the notion that the cause of failure, if ever true, lies elsewhere.

C. PRODUCTIVITY AS A FUNCTION OF PERSONAL VARIABLES

Raymond (1967) found that length of time to age of doctorate and to first production, characteristics perhaps relating to ability and to internal drive, correlate positively with productivity. Babchuk and Bates (1962) found that people in sociology who possessed certain characteristics were much more unlikely to be publishers than those who fell into other categories. For example, those with religious orientation and affiliation published less.

The absence of other data on this variable should not suggest it is unimportant. There simply have been few psychological data collected on faculty. (Roe's extensive work on an atypical sample of distinguished scientists is of course an exception.) The re-occurring fact of the discontinuous nature of faculty productivity suggests psychological causation.

1. Reward System

Marsh and Stafford (1967: 244) have shown that among faculties some "non-monetary professional values become an alternative 'currency' [to money] , with a different basis of value but with an

exchange rate." Said another way, academically employed professional and technical workers forego monetary returns relative to their non-academic counterparts. Marsh and Stafford found that academicians were willing to accept professionalism and its benefits as a substitute for money. (It may well be that tenure could be a psychic and an economic "benefit" and that it is directly related to professional and intellectual values. It has not been tested. Heretofore rewards have been assumed to come.)

Blackburn (1968), following Storrer (1966), has argued that a basic characteristic of academic men is the creative act. The creative act is completed, and then regenerated, if and only if the product created is critiqued by colleagues, that is, published. Anything less is imperfect or aborted. Thus productivity is its own reward and has no monetary counterpart.

Once more, primary faculty rewards are not connected directly with monetary return. Thus increase in rank, and hence in pay that comes with tenure, is not directly related to output.

2. Security

Security seems to be a relatively low-powered variable in productivity studies. Maslow (1968: 21-59) has suggested that security is a basic need which must be satisfied before other motivating forces become potent. Pelz and Andrews (1966, p. 241) found that middle levels of "social" security in a work group were related to the highest levels of productivity. Lazarsfeld and Thielens (1958: 192-204) found that faculty who became apprehensive during the

Joseph McCarthy era were inhibited from freely expressing their ideas. This in most cases would indicate a decline in productivity. What is not known is how productivity varies between groups who are secure in their jobs and those whose jobs are threatened, probably because the general level of job security in business and universities has been quite high.

The data on what faculty find satisfying (Eckert and Stecklein, 1961: 28, 38, for example) show that only a small percentage of faculty in the sample talked about job security and prestige as a high value. Four other factors were mentioned more often when they responded to appreciations and reward in their jobs. Security was mentioned less than 2% of the time.

3. Satisfaction

There seems to be little relationship between job satisfaction and productivity. Herzbert (1959: 8) claims a number of small, but consistently positive, correlations in the literature is evidence of a relationship. Lickert (1961: 14) suggests that the relationship increases with the complexity of the tasks involved. Vroom (1964: 181-186), however, who has listed the findings of more than 20 studies, reports only small correlations, around +.10. Moreover, no significant differences appear as tasks became more complex. Vroom did find, however, that less satisfied workers were absent more and were more mobile than satisfied workers (1964: 177-180). However, his data were not in university settings. Blackburn's (1971: 15) review of the literature on faculty revealed no relationships between productivity and satisfaction. Similarly,

Pelz and Andrews (1966: 112) found no relationships between satisfaction and productivity among scientists in business, universities, and government.

4. Stress

If stress can be defined in a general way with anxiety that could result from overload, then Vroom (1964: 204) reports that productivity declines as high levels of anxiety are reached. The cause of the anxiety is not known, but certainly insecurity could be one factor. Vroom cites evidence that productivity increases with motivation up to a critical level, and then decreases (1964: 204). When anxiety is high, work tends to be devoted to reducing anxiety instead of being directed to the task itself. Clark has shown that faculty who are less flexible, more anxious, or have lower self-esteem drop in productivity when overloaded or when they perceive that they are overloaded.

In light of the high work load reported by most faculty (Blackburn, 1971), sharp increases in the demands made on professors could be dysfunctional for productivity.

In all, then, personal factors do matter. However, again, they seem to be unrelated to age, and to rank, and hence to tenure.

IV. CONCLUSIONS

A. THE GENERAL FINDINGS

As for the charges of faculty lack of responsiveness to

important societal demands, of inadequate performance in the classroom of failure to undertake reform, none were negatively correlated with age and rank. Indeed, the relationships tended in the opposite, the positive, direction.

The findings with respect to productivity and age and rank are neither straight forward nor unequivocal. However, total productivity continues to increase with age, thereby vitiating the principal charge of sloth.

On the two principal charges, then, the overall conclusion is that a causal relationship between tenure and a lack of openness and between tenure and a cessation of output is not supported by the evidence.

Those initially attracted to tenure's picture can take heart. Analysis supports their taste. For those who at the outset viewed the canvas with reservation or found it not to their liking, hopefully analysis has given them new insights, fresh ways of seeing the relationships of the parts to the whole. Thus these sceptics will allow beauty to replace ugliness. Some of the remaining sections of this conclusion will aid in the reassessment process.

Returning to those who had their initial judgements supported, they have but a limited basis on which to rejoice. Equally clear from the data is that life in academe is anything but perfect. The system possesses a high coefficient of friction. Life could and should be much better than it is.

However, before turning to other very important considerations -- research needed and inferences for immediate action to correct flaws

and to improve the enterprises for the benefit of all, it is essential to call attention to two matters related to the attacks on tenure which have not been considered. One, the positive attributes of aging needs to be enumerated so as to remind the reader that the critics have distorted the picture. They have displayed it in the shadows. Full light is only fair. To accentuate the dark and to adumbrate the brighter hues distorts the full picture of aging. Those weighing the import of this inevitability will want to consider all of the ramifications of increasing age.

The other, academic freedom, is just too intimately connected to tenure to be slighted the way it has been here. There are some current events with respect to academic freedom that required proper attention to balance the presentation.

1. Aging

Increase in age -- and hence in rank and in the acquisition of tenure -- have failed to receive credits with which to offset the negative features, even when true. This is not surprising for so far there has been no public rebuttal. Yet sound employment practices which consider aging obviously will weigh the positive correlates along with its purported deleterious consequences during a full career.

For example, increase in managerial talents, socialization of novitiates, leadership, loyalty, stability, ... yes, even wisdom... no doubt correlate positively with increasing age. Recognition,

status, the ability to acquire outside resources, prestige -- such attributes accompany rank. Influence, confidence, and probably security, relate to tenure.

Taken together, such factors form an impressive set of strengths to consider. To only consider the negative features of aging badly distorts and leads to unwise action. As well selected colors complement one another, so do faculty from different stages of their career.

2. Academic Freedom

The historical and philosophical grounds for tenure in this country relate directly to the first principles on which contemporary institutions of higher education base their existence, namely, on academic freedom (Byse and Joughin, 1959; Hofstadter, 1955; Metzger, 1955; Van Alstyne, 1971). As Metzger has succinctly expressed the matter:

Academic freedom is not only relevant to the modern university, but essential to it -- the one grace that institution may not lose without losing everything. (Metzger, 1969: 1)

In addition, all constituencies -- board, administrators, faculty, and students -- hold the concern for academic freedom above every other aspect of higher education, be it research, teaching, salary, student rights, or whatever (Gross and Grambsch, 1968). Moreover, the "grace" is accorded the colleges and universities, not solely -- or even primarily -- for professors, but rather so students can learn truths, so society can benefit. As John Locke (1690) expressed

the fundamental essence long ago:

The peculiar evil of silencing the expression of an opinion is that it is robbing the human race, posterity as well as the existing generation -- those who dissent from the opinion, still more than those who hold it. If the opinion is right, they are deprived of the opportunity of exchanging error for truth; if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth produced by its collision with error.

Academic freedom's roots are deep. However, it is a special not common, soil which nurtures this fundamental principle of education. Contrary to what some have claimed, academic freedom does not enjoy the full protection of either the constitution or the courts (Fellman, 1961).

To compound the gravity of the matter, attacks on academic freedom have been rising rapidly.¹⁰ From the peak of academic freedom incidents

¹⁰The following computations were made by Breisch and Waggett (1971) from data taken from the AAUP Bulletin.

per faculty member during the McCarthy era of 1951-1955 to a low in 1961-1965, the number of violation cases have increased each of the last five years so that the number of 1969-1970 is more than double what it was in 1965-1966.

Academic freedom, like a citizen's civil rights, requires constant vigilance against temptations to limit and restrict it in times of stress. Tenure is no philosophical adjunct. It is needed. Tenure can be demonstrated to protect a faculty's academic freedom (Lewis, 1966; Bahr,

1967; AAUP, 1971).¹¹

¹¹ In this connection, a myth about tenure seems to flourish. It equates tenure with sinecure. Tenure's critics falsely claim the practice protects incompetents, that an unfit man can never be removed from his job.

The untruth of this charge is another full issue. Van Alstyne (1971) has handled it well. Suffice is it to say here that tenure does not protect incompetency. All tenure does is guard the professor charge from being found guilty, simply because someone accuses him.

That a charge is proof smacks of Joe McCarthyism. The accused must prove his innocence. Improper, everyone says. Right. And all tenure does is require the accuser to prove his claim rather than the charged prove his competency. It does not guarantee a position for the unfit.

Moreover, administrative concern and protective actions for faculty have not been uniform from institution to institution. For example, Lazarsfeld and Thielens (1958) found academic freedom practices and support by administrators for faculty to be highly related to the academic quality of an institution. But even high quality does not guarantee protection against attacks from outside academe. When studying sociologists at leading eastern institutions, Pfautz (1956) found the faculty about equally divided in their faith in their administrators to protect them in the case of a controversial issue of academic freedom.

Thus, like assessing the positive as well as the negative attributes of aging, so must the value of academic freedom be considered

in a complete discussion of tenure.

B. OTHER IMPORTANT FINDINGS

The charges with respect to faculty responsiveness and productivity were unsubstantiated, as was said above. At the same time, the analysis revealed a number of questionable human relation practices in colleges and universities. As mentioned in the introduction, the opportunity to do what should have been done without attacks, but was not, was welcomed. Now it is time to examine those consequences which reflect on faculty personnel management in higher education. This opportunity to improve current practices is too important to miss.

1. The Need for Assistant Professors

Major discoveries are made at a relatively early age in the sciences (Lehman, 1953). By definition, break-throughs defy convention (Kuhn, 1962). If a young man conforms so as to acquire tenure, if he stifles dissent in order to assure acceptance, if he suffers dysfunctional tensions in order to achieve a promotion to associate professor, then the way in which tenure is awarded needs revision. Counter-productive behaviors are not tenure's function or goal. A man's future needs to be made reasonably certain. The bounds of acceptable deviation must be understood. How colleagues will judge his acceptability have to be as unambiguous as humanly possible. He deserves a continuous assessment of his performance, so he can learn and grow.

Tenure inhibits no needed corrections in the poor personnel management just described. The young are essential for colleges and universities. Today they can be more highly selected than at any

time in the recent past. It would be a disgrace not to maximize their contribution to students, colleagues, the institutions, and society. Remedies come readily to mind. Some are offered below.

2. The Abberant Behavior of Associate Professors

The saddle in the output curve (figure 2, above) occurs at about the associate professor stage of a career. Stouffer (1954) found the associate professor to be the principal complainer of inadequate facilities. Shuman and Lauman (1967) found him to be the most conservative in a political sense, and so did Blackburn. Blackburn and Lindquist (1971) discovered that not only his colleagues of higher and lower ranks but also other associate professors find him enigmatic. Yet he has received tenure. Later he will become a full professor and move from these doldrums.

Maybe what is involved is the 40 year-old syndrome, popular in the psychological literature. But maybe other factors enter in. As it appeared to Blackburn and Lindquist, the man has reached a stage of acceptance by colleagues. But other college and universities don't seek him, for he is yet to be a proven star. So his alternatives are restricted. "Success" now means a promotion at home. To attain full professorship, don't rock the boat.

If this explanation possesses truth, then receiving tenure is a symbol of success, not basically security. Again, serious questions about personnel management arise. The conclusions with respect to the assistant professor apply -- continuous assessment of his performance, his participation in goal setting and evaluation of his work -- to mention

but two.

This is a career stage requiring special attention. Right now it is being neglected. Tenure is connected, but tenure is not the cause of the aberration. Unsatisfactory personnel practice is.

3. The Non-linear Path of Maturation

The cited studies by Lehman (1953), Pelz and Andrews (1966), and others suffice to demonstrate that a man has fertile and barren periods. He is much more likely to be cyclical in his productivity than to keep on a single path at a constant speed, year after year. He is likely to make major shifts in his interests, and hence to his most fruitful contributions. Yet he is most likely to receive the same assignments year after year. The proportion of teaching, research, and service are likely to be held constant for him year after year. Yet at times he needs colleagueship, a partner to work with; other times he will do best when left alone. Management errs when his work conditions are held inviolable year after year, as they frequently are.

A genuine loss -- personal and societal -- occurs when an academic man stops growing and developing, learning new things, exploring new interconnections. Nothing is quite so sad as a return to a campus after a six year interval and find a former colleague essentially where he was, still good, but complacent, no longer chopping at the bit, frustrated by a lack of time to undertake an endless collection of ideas he was generating. Such phenomenon

need not occur. Better faculty-faculty and faculty-administrative practices could eliminate such human waste.

4. The Importance of the Work Environment

Without extending the discussion by introducing additional studies, the findings by Meltzer (1956) and by Pelz and Andrews (1966) adequately show the strong relationship between work environment and productivity. Freedom and support were Meltzer's best predictors. The nature of the task, communication among members and administrators, change and challenge, security and support modified productivity for Pelz and Andrews. Each of these variables is a function of the work setting.

What emerges from the findings above is that tenure is not really involved, except indirectly, and, by implication, falsely so. What needs improvement, and in some places to an appreciable degree, is the human dimensions of a work situation. The deficiencies constitute solvable problems. Some require additional information. Some can be inaugurated without delay.

C. NEEDED RESEARCH

The analyses also reveal vast pockets of ignorance with regard to faculty careers. A few of the more pressing concerns are briefly mentioned here. Knowledge in these areas would advance the betterment of human relations in colleges and universities.

a) Research is needed that more often equates teaching effectiveness with student learning rather than disproportionately with satisfaction. Hoyt (1969a; 1969b) has pioneered, but more studies are

needed. Permanent learning, that is, retention will be an even better measure and needs to be studied.

b) How teaching effectiveness and contribution to the college fluctuate with age requires investigation. Figure 1 and 2 displayed an increasing variance with age. Do some professors continuously improve? others deteriorate? all fluctuate? If there is regression for some, can intervention alter the outcome?

c) How the professor's performance with respect to committee assignments and to other service roles he fills for his college changes with age, rank, and tenure is not known. They need to be.

d) Only one study focuses on productivity as an overall contribution to the organization, the production measure for the vast majority of faculty in the United States (Blackburn and Clark). Their findings require corroboration, extension, and refinement. Productivity patterns are non-existent in the humanities. Can a comprehensive history be written before a mature age, for example? Professional schools -- art, law, medicine, music -- may well have distinctive patterns quite different from the liberal arts.

e) And with respect to tenure itself research is needed. For example, higher education needs to know some very elementary but nonetheless very fundamental facts about the practice of tenure. For example, does a man's behavior change in important ways with the conferring of tenure? If so, in what ways? Does he now write with more flair? speak with greater confidence? produce more exciting research? teach with increased zeal? defend the first principles of the academic life with unhesitating vigor? Or are the opposites in

in some way involved, as charged, but unsupported by the data.

No research exists on this critical point in a man's career. (In fact, no longitudinal research on faculty has been conducted.) The effort will not be as simple as it first may sound. One of the cardinal practices in academe is for the academic man to profess anything but concern about his being awarded tenure. In the same way that he never announces that a piece of his work has been accepted for publication, but rather lets his colleagues discover it in print and then professes surprise that he had not remarked about it earlier, so is the protocol with the reception of tenure. He must act as if it were not important, that in no way would it affect his behavior, that it really is of no consequence, that security is not an important value for him. Thus, as the professor suppresses and conceals an elation and satisfaction about the acceptance of a scholarly effort, so too he conceals deep feelings, hides career reassessments, or whatever may indeed be personal and very important to his future. In-depth research on this aspect of tenure can uncover important insights about the practices of the academy and the values professors hold.

The list could be extended, unfortunately too easily and too extensively. Space terminates the enumeration. The paper concludes with some recommendations for action.

D. IMPLICATIONS

While research is launched, there is no cause to delay in initiating the obvious reforms. To begin with, faculty must face their role in

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management and not duck. For example, faculty have argued and secured (de facto) the vital right to select, promote, and award tenure to their colleagues. To hold that privilege they must also assume leadership in acting towards peers who are slipping -- to help them up, and to support them,-- but also to act to remove them when remediation and rehabilitation fail.

Faculty cannot renig from the unpleasant aspects of controlling collegueship. Some think they do because they shy from conflict. (See, e.g., McGill, 1971.) Whatever the reason, the right to control their work environments requires dealing with misery as well as with pleasure. Faculty negligence on policing themselves is unacceptable behavior.

On the positive side, faculty need avenues to express desires and expectations. Administrators can't simply assume a man is satisfying his desires if he never asks him what they are. The device of a department chairman asking a man to set some goals for a year, helping him be realistic about what can be accomplished in twelve months, and discussing with him the needs of the organization goes a long ways, and it is so simple. Each informs the other and sets standards by which success can be judged. Too often it seems the man believes he is judged on criteria he thinks secondary whereas the boss believes he is assessing on what the man holds dearest (Theopolus, 1967). Both are wrong, just because they never even took the time to ask one another what is vital to both. Absurd, yes, but equally easily correctable.

Turning to matters more directly on the administrative side of the ledger, three confidential reports from a major university (which

has both a high percentage of tenured faculty and is and has been in a non-growth state for several years) show that the feared pending disasters of no new input are greatly exaggerated and founded on spurious assumptions. Even as age increases, and the percentage on tenure rises, openings are created by retirement and departures. Furthermore, good men can be persuaded to move into new areas to spark innovations, seed growth, and foster development. And even more refreshing -- for those who did not happen to already know, it takes very little new blood to make a great deal happen. Thus, since the market is all on the side of the employer, careful selection for those openings that arise can permit -- yea, even guarantee -- a continuously vital organization, one responsive to legitimate demands, one highly productive for societal needs. This is good news.

The other side of the administrative role is the leadership one, the spokesman's function for higher education. Presidents have been too silent during the assaults on tenure. They need to speak out -- to boards, Legislators, alumni, students, citizens. They need to explain what tenure is, and what it is not. They know that its elimination would not solve the larger problems, the ones really under attack.¹²

¹²A good guess would be that even if there were periodic review of tenured faculty by administrators, students, faculty, whoever, the number of places created would be infinitesimal.

Eliminating tenure would not solve discrimination against women, blacks, or other minority groups. Thus Saltzman's (1971) national tenure

accreditation board addresses the wrong problems. Early retirement may be a healthy and humane practice for some, for example.¹³

¹³Recall, however, the rise in the productivity curve at the end of the career.

It is not, however, solving what the critics of tenure have unsupportedly charged. Administrators, as a college's leading spokesman, must inform higher education's constituencies on these matters.

Administrators also need to initiate the review of their institution's personnel practices. Modifications must be considered, as the Commission to study tenure (1971) at the University of Utah thoroughly did. There always will be someone who believes someone else is incompetent-- or knows someone who knows someone who is claimed incompetent. Furthermore, that someone will blame tenure for his continued presence. In addition, he will probably believe that tenure is a "system" and if, as he has assumed, the system serves as a sinecure for incompetence, then the entire system is at fault and must be eradicated. It is not as easy to lay to rest the errors in this man's presumption. But that does not make it any less the administrator's duty to try to do so -- and to work to improve the human conditions within academe. This is no minor task for a president to perform. It is a noble one.

In the final analysis, then, the hunch at the outset was correct. Personnel practices, not tenure, need improvement. The canvas we have painted is not a masterpiece, yet. It has some flaws.

And in the end, the helpful metaphor has failed. Higher education

is not a work of art, an inorganic canvas. Instead, she is a living, dynamic organism -- metabolizing and growing, responding to a changing environment. And she is beautiful.

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